

SEQUENCE LISTING

<110> Estell, David
Harding, Fiona

<120> PROTEINS PRODUCING AN ALTERED IMMUNOGENIC RESPONSE AND
METHODS OF MAKING AND USING THE SAME

<130> GC527C2

<140> US 09/677,822

<141> 2000-10-02

<150> US 09/500,135

<151> 2000-02-08

<150> US 09/060,872

<151> 1998-04-15

<160> 240

<170> PatentIn Ver. 2.1

<210> 1

<211> 1495

<212> DNA

<213> Bacillus amyloliquefaciens

<220>

<221> mat_peptide

<222> (417)..(1495)

<220>

<221> CDS

<222> (96)..(1244)

<220>

<221> misc feature

<222> (582)..(584)

<223> The nnn at positions 582 through 584 which in a preferred embodiment (aat) is to code for asparagine, but which may also code for proline.

<220>

<221> misc feature

<222> (585)..(587)

<223> The nnn at positions 585 through 587 which in a preferred embodiment (cct) is to code for proline, but which may also code for asparagine.

<220>

<221> misc feature

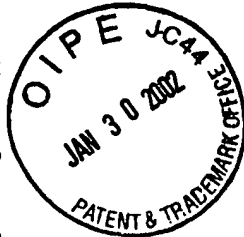
<222> (597)..(599)

<223> The nnn at positions 597 to 599 which in a preferred embodiment (aac) is to code for asparagine, but which may also code for aspartic acid.

<220>

<221> misc feature

<222> (678)..(680)



<223> The nnn at positions 678 through 680 which in a preferred embodiment (gca) is to code for alanine, but which may also code for serine.

<220>

<221> misc_feature

<222> (681)..(683)

<223> The nnn at positions 681 through 683 which in a preferred embodiment (tca) is to code for serine, but which may also code for alanine.

<220>

<221> misc_feature

<222> (708)..(710)

<223> The nnn at positions 708 through 710 which in a preferred embodiment (gct) is to code for alanine, but which may also code for aspartic acid.

<220>

<221> misc_feature

<222> (711)..(713)

<223> The nnn at positions 711 through 713 which in a preferred embodiment (gac) is to code for aspartic acid, but which may also code for alanine.

<220>

<221> misc_feature

<222> (888)..(890)

<223> The nnn at positions 888 through 890 which in a preferred embodiment (act) is to code for threonine, but which may also code for serine.

<220>

<221> misc_feature

<222> (891)..(893)

<223> The nnn at positions 891 through 893 which in a preferred embodiment (tcc) is to code for serine, but which may also code for threonine.

<220>

<221> misc_feature

<222> (1167)..(1169)

<223> The nnn at positions 1167 through 1169 which in a preferred embodiment (gaa) is to code for glutamic acid, but which may also code for glutamine.

<400> 1

ggtctactaa aatattattc catactatac aattaatata cagaataatc tgtctattgg 60

ttattctgca aatgaaaaaa aggagaggat aaaga atg aga ggc aaa aaa gta 113
Met Arg Gly Lys Lys Val
-105

tgg atc agt ttg ctg ttt gct tta gcg tta atc ttt acg atg gcg ttc 161
Trp Ile Ser Leu Leu Phe Ala Leu Ala Leu Ile Phe Thr Met Ala Phe
-100 -95 -90

ggc agc aca tcc tct gcc cag gcg gca ggg aaa tca aac ggg gaa aag 209
Gly Ser Thr Ser Ser Ala Gln Ala Ala Gly Lys Ser Asn Gly Glu Lys
-85 -80 -75 -70

aaa tat att gtc ggg ttt aaa cag aca atg agc acg atg agc gcc gct	257
Lys Tyr Ile Val Gly Phe Lys Gln Thr Met Ser Thr Met Ser Ala Ala	
-65 -60 -55	
aag aag aaa gat gtc att tct gaa aaa ggc ggg aaa gtg caa aag caa	305
Lys Lys Lys Asp Val Ile Ser Glu Lys Gly Gly Lys Val Gln Lys Gln	
-50 -45 -40	
ttc aaa tat gta gac gca gct tca gct aca tta aac gaa aaa gct gta	353
Phe Lys Tyr Val Asp Ala Ala Ser Ala Thr Leu Asn Glu Lys Ala Val	
-35 -30 -25	
aaa gaa ttg aaa aaa gac ccg agc gtc gct tac gtt gaa gaa gat cac	401
Lys Glu Leu Lys Lys Asp Pro Ser Val Ala Tyr Val Glu Glu Asp His	
-20 -15 -10	
gta gca cat gcg tac gcg cag tcc gtg cct tac ggc gta tca caa att	449
Val Ala His Ala Tyr Ala Gln Ser Val Pro Tyr Gly Val Ser Gln Ile	
-5 -1 1 5 10	
aaa gcc cct gct ctg cac tct caa ggc tac act gga tca aat gtt aaa	497
Lys Ala Pro Ala Leu His Ser Gln Gly Tyr Thr Gly Ser Asn Val Lys	
15 20 25	
gta gcg gtt atc gac agc ggt atc gat tct tct cat cct gat tta aag	545
Val Ala Val Ile Asp Ser Gly Ile Asp Ser Ser His Pro Asp Leu Lys	
30 35 40	
gta gca ggc gga gcc agc atg gtt cct tct gaa aca nnn nnn ttc caa	593
Val Ala Gly Gly Ala Ser Met Val Pro Ser Glu Thr Xaa Xaa Phe Gln	
45 50 55	
gac nnn aac tct cac gga act cac gtt gcc ggc aca gtt gcg gct ctt	641
Asp Xaa Asn Ser His Gly Thr His Val Ala Gly Thr Val Ala Ala Leu	
60 65 70 75	
aat aac tca atc ggt gta tta ggc gtt gcg cca agc nnn nnn ctt tac	689
Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Ser Xaa Xaa Leu Tyr	
80 85 90	
gct gta aaa gtt ctc ggt nnn nnn ggt tcc ggc caa tac agc tgg atc	737
Ala Val Lys Val Leu Gly Xaa Xaa Gly Ser Gly Gln Tyr Ser Trp Ile	
95 100 105	
att aac gga atc gag tgg gcg atc gca aac aat atg gac gtt att aac	785
Ile Asn Gly Ile Glu Trp Ala Ile Ala Asn Asn Met Asp Val Ile Asn	
110 115 120	
atg agc ctc ggc gga cct tct ggt tct gct gct tta aaa gcg gca gtt	833
Met Ser Leu Gly Gly Pro Ser Gly Ser Ala Ala Leu Lys Ala Ala Val	
125 130 135	
gat aaa gcc gtt gca tcc ggc gtc gta gtc gtt gcg gca gcc ggt aac	881
Asp Lys Ala Val Ala Ser Gly Val Val Val Ala Ala Ala Gly Asn	
140 145 150 155	
gaa ggc nnn nnn ggc agc tca agc aca gtg ggc tac cct ggt aaa tac	929
Glu Gly Xaa Xaa Gly Ser Ser Ser Thr Val Gly Tyr Pro Gly Lys Tyr	
160 165 170	

cct tct gtc att gca gta ggc gct gtt gac agc agc aac caa aga gca 977
Pro Ser Val Ile Ala Val Gly Ala Val Asp Ser Ser Asn Gln Arg Ala
175 180 185

tct ttc tca agc gta gga cct gag ctt gat gtc atg gca cct ggc gta 1025
Ser Phe Ser Ser Val Gly Pro Glu Leu Asp Val Met Ala Pro Gly Val
190 195 200

tct atc caa agc acg ctt cct gga aac aaa tac ggg gcg tac aac ggt 1073
Ser Ile Gln Ser Thr Leu Pro Gly Asn Lys Tyr Gly Ala Tyr Asn Gly
205 210 215

acg tca atg gca tct ccg cac gtt gcc gga gcg gct gct ttg att ctt 1121
Thr Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu Ile Leu
220 225 230 235

tct aag cac ccg aac tgg aca aac act caa gtc cgc agc agt tta nnn 1169
Ser Lys His Pro Asn Trp Thr Asn Thr Gln Val Arg Ser Ser Leu Xaa
240 245 250

aac acc act aca aaa ctt ggt gat tct ttc tac tat gga aaa ggg ctg 1217
Asn Thr Thr Thr Lys Leu Gly Asp Ser Phe Tyr Tyr Gly Lys Gly Leu
255 260 265

atc aac gta cag gcg gca gct cag taa aacataaaaa accggccttg 1264
Ile Asn Val Gln Ala Ala Ala Gln
270 275

gccccgcgcg tttttttatt tttcttctc cgcatgttca atccgctcca taatcgacgg 1324

atggctccct ctgaaaattt taacgagaaa cggcggttg acccggtca gtcccgtaac 1384

ggccaagtcc tgaaacgtct caatcgccgc ttcccggttt ccggtcagct caatgccgta 1444

acggtcggcg gcgttttctt gataccggga gacggcattc gtaatcgat c 1495

<210> 2
<211> 382
<212> PRT
<213> Bacillus amyloliquefaciens

<220>
<221> VARIANT
<222> (163)...(163)
<223> Xaa = Asn or Pro

<220>
<221> VARIANT
<222> (164)...(164)
<223> Xaa = Pro or Asn

<220>
<221> VARIANT
<222> (168)...(168)
<223> Xaa = Asn or Asp

<220>
<221> VARIANT

<222> (195)...(195)
 <223> Xaa = Ala or Ser

<220>
 <221> VARIANT
 <222> (196)...(196)
 <223> Xaa = Ser or Ala

<220>
 <221> VARIANT
 <222> (205)...(205)
 <223> Xaa = Ala or Asp

<220>
 <221> VARIANT
 <222> (206)...(206)
 <223> Xaa = Asp or Ala

<220>
 <221> VARIANT
 <222> (265)...(265)
 <223> Xaa = Thr or Ser

<220>
 <221> VARIANT
 <222> (266)...(266)
 <223> Xaa = Ser or Thr

<220>
 <221> VARIANT
 <222> (358)...(358)
 <223> Xaa = Gln or Glu

<400> 2
 Met Arg Gly Lys Lys Val Trp Ile Ser Leu Leu Phe Ala Leu Ala Leu
 1 5 10 15
 Ile Phe Thr Met Ala Phe Gly Ser Thr Ser Ser Ala Gln Ala Ala Gly
 20 25 30
 Lys Ser Asn Gly Glu Lys Lys Tyr Ile Val Gly Phe Lys Gln Thr Met
 35 40 45
 Ser Thr Met Ser Ala Ala Lys Lys Lys Asp Val Ile Ser Glu Lys Gly
 50 55 60
 Gly Lys Val Gln Lys Gln Phe Lys Tyr Val Asp Ala Ala Ser Ala Thr
 65 70 75 80
 Leu Asn Glu Lys Ala Val Lys Glu Leu Lys Lys Asp Pro Ser Val Ala
 85 90 95
 Tyr Val Glu Glu Asp His Val Ala His Ala Tyr Ala Gln Ser Val Pro
 100 105 110
 Tyr Gly Val Ser Gln Ile Lys Ala Pro Ala Leu His Ser Gln Gly Tyr
 115 120 125
 Thr Gly Ser Asn Val Lys Val Ala Val Ile Asp Ser Gly Ile Asp Ser
 130 135 140
 Ser His Pro Asp Leu Lys Val Ala Gly Gly Ala Ser Met Val Pro Ser
 145 150 155 160
 Glu Thr Xaa Xaa Phe Gln Asp Xaa Asn Ser His Gly Thr His Val Ala
 165 170 175
 Gly Thr Val Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala
 180 185 190
 Pro Ser Xaa Xaa Leu Tyr Ala Val Lys Val Leu Gly Xaa Xaa Gly Ser
 195 200 205

Gly	Gln	Tyr	Ser	Trp	Ile	Ile	Asn	Gly	Ile	Glu	Trp	Ala	Ile	Ala	Asn
210						215				220					
Asn	Met	Asp	Val	Ile	Asn	Met	Ser	Leu	Gly	Gly	Pro	Ser	Gly	Ser	Ala
225					230				235						240
Ala	Leu	Lys	Ala	Ala	Val	Asp	Lys	Ala	Val	Ala	Ser	Gly	Val	Val	Val
				245					250					255	
Val	Ala	Ala	Ala	Gly	Asn	Glu	Gly	Xaa	Xaa	Gly	Ser	Ser	Ser	Thr	Val
				260				265					270		
Gly	Tyr	Pro	Gly	Lys	Tyr	Pro	Ser	Val	Ile	Ala	Val	Gly	Ala	Val	Asp
		275					280					285			
Ser	Ser	Asn	Gln	Arg	Ala	Ser	Phe	Ser	Ser	Val	Gly	Pro	Glu	Leu	Asp
	290					295					300				
Val	Met	Ala	Pro	Gly	Val	Ser	Ile	Gln	Ser	Thr	Leu	Pro	Gly	Asn	Lys
305					310					315					320
Tyr	Gly	Ala	Tyr	Asn	Gly	Thr	Ser	Met	Ala	Ser	Pro	His	Val	Ala	Gly
				325					330					335	
Ala	Ala	Ala	Leu	Ile	Leu	Ser	Lys	His	Pro	Asn	Trp	Thr	Asn	Thr	Gln
			340					345					350		
Val	Arg	Ser	Ser	Leu	Xaa	Asn	Thr	Thr	Thr	Lys	Leu	Gly	Asp	Ser	Phe
		355				360						365			
Tyr	Tyr	Gly	Lys	Gly	Leu	Ile	Asn	Val	Gln	Ala	Ala	Ala	Gln		
	370					375					380				

<210> 3
 <211> 275
 <212> PRT
 <213> Bacillus amyloliquefaciens

<400> 3

Ala	Gln	Ser	Val	Pro	Tyr	Gly	Val	Ser	Gln	Ile	Lys	Ala	Pro	Ala	Leu
1				5					10					15	
His	Ser	Gln	Gly	Tyr	Thr	Gly	Ser	Asn	Val	Lys	Val	Ala	Val	Ile	Asp
		20						25					30		
Ser	Gly	Ile	Asp	Ser	Ser	His	Pro	Asp	Leu	Lys	Val	Ala	Gly	Gly	Ala
		35					40					45			
Ser	Met	Val	Pro	Ser	Glu	Thr	Asn	Pro	Phe	Gln	Asp	Asn	Asn	Ser	His
	50					55					60				
Gly	Thr	His	Val	Ala	Gly	Thr	Val	Ala	Ala	Leu	Asn	Asn	Ser	Ile	Gly
	65				70					75					80
Val	Leu	Gly	Val	Ala	Pro	Ser	Ala	Ser	Leu	Tyr	Ala	Val	Lys	Val	Leu
				85					90					95	
Gly	Ala	Asp	Gly	Ser	Gly	Gln	Tyr	Ser	Trp	Ile	Ile	Asn	Gly	Ile	Glu
			100					105					110		
Trp	Ala	Ile	Ala	Asn	Asn	Met	Asp	Val	Ile	Asn	Met	Ser	Leu	Gly	Gly
		115					120					125			
Pro	Ser	Gly	Ser	Ala	Ala	Leu	Lys	Ala	Ala	Val	Asp	Lys	Ala	Val	Ala
		130				135					140				
Ser	Gly	Val	Val	Val	Val	Ala	Ala	Ala	Gly	Asn	Glu	Gly	Thr	Ser	Gly
	145					150				155					160

Ser Ser Ser Thr Val Gly Tyr Pro Gly Lys Tyr Pro Ser Val Ile Ala
 165 170 175
 Val Gly Ala Val Asp Ser Ser Asn Gln Arg Ala Ser Phe Ser Ser Val
 180 185 190
 Gly Pro Glu Leu Asp Val Met Ala Pro Gly Val Ser Ile Gln Ser Thr
 195 200 205
 Leu Pro Gly Asn Lys Tyr Gly Ala Tyr Asn Gly Thr Ser Met Ala Ser
 210 215 220
 Pro His Val Ala Gly Ala Ala Ala Leu Ile Leu Ser Lys His Pro Asn
 225 230 235 240
 Trp Thr Asn Thr Gln Val Arg Ser Ser Leu Glu Asn Thr Thr Thr Lys
 245 250 255
 Leu Gly Asp Ser Phe Tyr Tyr Gly Lys Gly Leu Ile Asn Val Gln Ala
 260 265 270
 Ala Ala Gln
 275

<210> 4
 <211> 275
 <212> PRT
 <213> Bacillus subtilis

<400> 4
 Ala Gln Ser Val Pro Tyr Gly Ile Ser Gln Ile Lys Ala Pro Ala Leu
 1 5 10 15
 His Ser Gln Gly Tyr Thr Gly Ser Asn Val Lys Val Ala Val Ile Asp
 20 25 30
 Ser Gly Ile Asp Ser Ser His Pro Asp Leu Asn Val Arg Gly Gly Ala
 35 40 45
 Ser Phe Val Pro Ser Glu Thr Asn Pro Tyr Gln Asp Gly Ser Ser His
 50 55 60
 Gly Thr His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile Gly
 65 70 75 80
 Val Leu Gly Val Ser Pro Ser Ala Ser Leu Tyr Ala Val Lys Val Leu
 85 90 95
 Asp Ser Thr Gly Ser Gly Gln Tyr Ser Trp Ile Ile Asn Gly Ile Glu
 100 105 110
 Trp Ala Ile Ser Asn Asn Met Asp Val Ile Asn Met Ser Leu Gly Gly
 115 120 125
 Pro Thr Gly Ser Thr Ala Leu Lys Thr Val Val Asp Lys Ala Val Ser
 130 135 140
 Ser Gly Ile Val Val Ala Ala Ala Ala Gly Asn Glu Gly Ser Ser Gly
 145 150 155 160

Ser Thr Ser Thr Val Gly Tyr Pro Ala Lys Tyr Pro Ser Thr Ile Ala
 165 170 175
 Val Gly Ala Val Asn Ser Ser Asn Gln Arg Ala Ser Phe Ser Ser Ala
 180 185 190
 Gly Ser Glu Leu Asp Val Met Ala Pro Gly Val Ser Ile Gln Ser Thr
 195 200 205
 Leu Pro Gly Gly Thr Tyr Gly Ala Tyr Asn Gly Thr Ser Met Ala Thr
 210 215 220
 Pro His Val Ala Gly Ala Ala Ala Leu Ile Leu Ser Lys His Pro Thr
 225 230 235 240
 Trp Thr Asn Ala Gln Val Arg Asp Arg Leu Glu Ser Thr Ala Thr Tyr
 245 250 255
 Leu Gly Asn Ser Phe Tyr Tyr Gly Lys Gly Leu Ile Asn Val Gln Ala
 260 265 270
 Ala Ala Gln
 275

<210> 5
 <211> 274
 <212> PRT
 <213> Bacillus licheniformis

<400> 5
 Ala Gln Thr Val Pro Tyr Gly Ile Pro Leu Ile Lys Ala Asp Lys Val
 1 5 10 15
 Gln Ala Gln Gly Phe Lys Gly Ala Asn Val Lys Val Ala Val Leu Asp
 20 25 30
 Thr Gly Ile Gln Ala Ser His Pro Asp Leu Asn Val Val Gly Gly Ala
 35 40 45
 Ser Phe Val Ala Gly Glu Ala Tyr Asn Thr Asp Gly Asn Gly His Gly
 50 55 60
 Thr His Val Ala Gly Thr Val Ala Ala Leu Asp Asn Thr Thr Gly Val
 65 70 75 80
 Leu Gly Val Ala Pro Ser Val Ser Leu Tyr Ala Val Lys Val Leu Asn
 85 90 95
 Ser Ser Gly Ser Gly Ser Tyr Ser Gly Ile Val Ser Gly Ile Glu Trp
 100 105 110
 Ala Thr Thr Asn Gly Met Asp Val Ile Asn Met Ser Leu Gly Gly Ala
 115 120 125
 Ser Gly Ser Thr Ala Met Lys Gln Ala Val Asp Asn Ala Tyr Ala Arg
 130 135 140
 Gly Val Val Val Val Ala Ala Ala Gly Asn Ser Gly Asn Ser Gly Ser

145 150 155 160
 Thr Asn Thr Ile Gly Tyr Pro Ala Lys Tyr Asp Ser Val Ile Ala Val
 165 170 175
 Gly Ala Val Asp Ser Asn Ser Asn Arg Ala Ser Phe Ser Ser Val Gly
 180 185 190
 Ala Glu Leu Glu Val Met Ala Pro Gly Ala Gly Val Tyr Ser Thr Tyr
 195 200 205
 Pro Thr Asn Thr Tyr Ala Thr Leu Asn Gly Thr Ser Met Ala Ser Pro
 210 215 220
 His Val Ala Gly Ala Ala Ala Leu Ile Leu Ser Lys His Pro Asn Leu
 225 230 235 240
 Ser Ala Ser Gln Val Arg Asn Arg Leu Ser Ser Thr Ala Thr Tyr Leu
 245 250 255
 Gly Ser Ser Phe Tyr Tyr Gly Lys Gly Leu Ile Asn Val Glu Ala Ala
 260 265 270
 Ala Gln

<210> 6
 <211> 269
 <212> PRT
 <213> Bacillus lentus

<400> 6
 Ala Gln Ser Val Pro Trp Gly Ile Ser Arg Val Gln Ala Pro Ala Ala
 1 5 10 15
 His Asn Arg Gly Leu Thr Gly Ser Gly Val Lys Val Ala Val Leu Asp
 20 25 30
 Thr Gly Ile Ser Thr His Pro Asp Leu Asn Ile Arg Gly Gly Ala Ser
 35 40 45
 Phe Val Pro Gly Glu Pro Ser Thr Gln Asp Gly Asn Gly His Gly Thr
 50 55 60
 His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile Gly Val Leu
 65 70 75 80
 Gly Val Ala Pro Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala
 85 90 95
 Ser Gly Ser Gly Ser Val Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala
 100 105 110
 Gly Asn Asn Gly Met His Val Ala Asn Leu Ser Leu Gly Ser Pro Ser
 115 120 125
 Pro Ser Ala Thr Leu Glu Gln Ala Val Asn Ser Ala Thr Ser Arg Gly
 130 135 140

Val Leu Val Val Ala Ala Ser Gly Asn Ser Gly Ala Gly Ser Ile Ser
145 150 155 160

Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val Gly Ala Thr Asp Gln
165 170 175

Asn Asn Asn Arg Ala Ser Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile
180 185 190

Val Ala Pro Gly Val Asn Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr
195 200 205

Ala Ser Leu Asn Gly Thr Ser Met Ala Thr Pro His Val Ala Gly Ala
210 215 220

Ala Ala Leu Val Lys Gln Lys Asn Pro Ser Trp Ser Asn Val Gln Ile
225 230 235 240

Arg Asn His Leu Lys Asn Thr Ala Thr Ser Leu Gly Ser Thr Asn Leu
245 250 255

Tyr Gly Ser Gly Leu Val Asn Ala Glu Ala Ala Thr Arg
260 265

<210> 7
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 7
Ile Lys Asp Phe His Val Tyr Phe Arg Glu Ser Arg Asp Ala Gly
1 5 10 15

<210> 8
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 8
Leu Glu Gln Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val
1 5 10 15

<210> 9
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 9

Ala Gln Ser Val Pro Trp Gly Ile Ser Arg Val Gln Ala Pro Ala
1 5 10 15

<210> 10
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 10
Val Pro Trp Gly Ile Ser Arg Val Gln Ala Pro Ala Ala His Asn
1 5 10 15

<210> 11
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 11
Gly Ile Ser Arg Val Gln Ala Pro Ala Ala His Asn Arg Gly Leu
1 5 10 15

<210> 12
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 12
Arg Val Gln Ala Pro Ala Ala His Asn Arg Gly Leu Thr Gly Ser
1 5 10 15

<210> 13
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 13
Ala Pro Ala Ala His Asn Arg Gly Leu Thr Gly Ser Gly Val Lys
1 5 10 15

<210> 14
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 14
Ala His Asn Arg Gly Leu Thr Gly Ser Gly Val Lys Val Ala Val
1 5 10 15

<210> 15
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 15
Arg Gly Leu Thr Gly Ser Gly Val Lys Val Ala Val Leu Asp Thr
1 5 10 15

<210> 16
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 16
Thr Gly Ser Gly Val Lys Val Ala Val Leu Asp Thr Gly Ile Ser
1 5 10 15

<210> 17
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 17
Gly Val Lys Val Ala Val Leu Asp Thr Gly Ile Ser Thr His Pro
1 5 10 15

<210> 18
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 18
Val Ala Val Leu Asp Thr Gly Ile Ser Thr His Pro Asp Leu Asn
1 5 10 15

<210> 19
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 19
Leu Asp Thr Gly Ile Ser Thr His Pro Asp Leu Asn Ile Arg Gly
1 5 10 15

<210> 20
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 20
Gly Ile Ser Thr His Pro Asp Leu Asn Ile Arg Gly Gly Ala Ser
1 5 10 15

<210> 21
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 21
Thr His Pro Asp Leu Asn Ile Arg Gly Gly Ala Ser Phe Val Pro
1 5 10 15

<210> 22
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 22
Asp Leu Asn Ile Arg Gly Gly Ala Ser Phe Val Pro Gly Glu Pro
1 5 10 15

<210> 23
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 23
Ile Arg Gly Gly Ala Ser Phe Val Pro Gly Glu Pro Ser Thr Gln
1 5 10 15

<210> 24
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 24
Gly Ala Ser Phe Val Pro Gly Glu Pro Ser Thr Gln Asp Gly Asn
1 5 10 15

<210> 25
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 25
Phe Val Pro Gly Glu Pro Ser Thr Gln Asp Gly Asn Gly His Gly
1 5 10 15

<210> 26
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 26
Gly Glu Pro Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val
1 5 10 15

<210> 27
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 27
Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr
1 5 10 15

<210> 28
<211> 15

<212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 28
 Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile Ala Ala
 1 5 10 15

<210> 29
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 29
 Gly His Gly Thr His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn
 1 5 10 15

<210> 30
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 30
 Thr His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile Gly
 1 5 10 15

<210> 31
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 31
 Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly
 1 5 10 15

<210> 32
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 32
 Ile Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro

1 5 10 15

<210> 33
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 33
 Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Ser Ala Glu
 1 5 10 15

<210> 34
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 34
 Ser Ile Gly Val Leu Gly Val Ala Pro Ser Ala Glu Leu Tyr Ala
 1 5 10 15

<210> 35
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 35
 Val Leu Gly Val Ala Pro Ser Ala Glu Leu Tyr Ala Val Lys Val
 1 5 10 15

<210> 36
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 36
 Val Ala Pro Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala
 1 5 10 15

<210> 37
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 37
 Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser
 1 5 10 15

 <210> 38
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 38
 Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser Gly Ser Val
 1 5 10 15

 <210> 39
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 39
 Val Lys Val Leu Gly Ala Ser Gly Ser Gly Ser Val Ser Ser Ile
 1 5 10 15

 <210> 40
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 40
 Leu Gly Ala Ser Gly Ser Gly Ser Val Ser Ser Ile Ala Gln Gly
 1 5 10 15

 <210> 41
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 41
 Ser Gly Ser Gly Ser Val Ser Ser Ile Ala Gln Gly Leu Glu Trp
 1 5 10 15

<210> 42
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 42
 Gly Ser Val Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala Gly Asn
 1 5 10 15

<210> 43
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 43
 Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala Gly Asn Asn Gly Met
 1 5 10 15

<210> 44
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 44
 Ala Gln Gly Leu Glu Trp Ala Gly Asn Asn Gly Met His Val Ala
 1 5 10 15

<210> 45
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 45
 Leu Glu Trp Ala Gly Asn Asn Gly Met His Val Ala Asn Leu Ser
 1 5 10 15

<210> 46
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

<400> 46
 Ala Gly Asn Asn Gly Met His Val Ala Asn Leu Ser Leu Gly Ser
 1 5 10 15

<210> 47
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 47
 Asn Gly Met His Val Ala Asn Leu Ser Leu Gly Ser Pro Ser Pro
 1 5 10 15

<210> 48
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 48
 His Val Ala Asn Leu Ser Leu Gly Ser Pro Ser Pro Ser Ala Thr
 1 5 10 15

<210> 49
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 49
 Asn Leu Ser Leu Gly Ser Pro Ser Pro Ser Ala Thr Leu Glu Gln
 1 5 10 15

<210> 50
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 50
 Leu Gly Ser Pro Ser Pro Ser Ala Thr Leu Glu Gln Ala Val Asn
 1 5 10 15

<210> 51
 <211> 15
 <212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 51

Pro	Ser	Pro	Ser	Ala	Thr	Leu	Glu	Gln	Ala	Val	Asn	Ser	Ala	Thr
1				5					10					15

<210> 52

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 52

Ser	Ala	Thr	Leu	Glu	Gln	Ala	Val	Asn	Ser	Ala	Thr	Ser	Arg	Gly
1				5					10					15

<210> 53

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 53

Leu	Glu	Gln	Ala	Val	Asn	Ser	Ala	Thr	Ser	Arg	Gly	Val	Leu	Val
1				5					10					15

<210> 54

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 54

Ala	Val	Asn	Ser	Ala	Thr	Ser	Arg	Gly	Val	Leu	Val	Val	Ala	Ala
1				5					10					15

<210> 55

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 55

Ser	Ala	Thr	Ser	Arg	Gly	Val	Leu	Val	Val	Ala	Ala	Ser	Gly	Asn
1				5						10				15

<210> 56
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 56
Ser Arg Gly Val Leu Val Val Ala Ala Ser Gly Asn Ser Gly Ala
1 5 10 15

<210> 57
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 57
Val Leu Val Val Ala Ala Ser Gly Asn Ser Gly Ala Gly Ser Ile
1 5 10 15

<210> 58
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 58
Val Ala Ala Ser Gly Asn Ser Gly Ala Gly Ser Ile Ser Tyr Pro
1 5 10 15

<210> 59
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 59
Ser Gly Asn Ser Gly Ala Gly Ser Ile Ser Tyr Pro Ala Arg Tyr
1 5 10 15

<210> 60
<211> 15
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 60

Ser Gly Ala Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala
1 5 10 15

<210> 61

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 61

Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val
1 5 10 15

<210> 62

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 62

Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val Gly Ala Thr
1 5 10 15

<210> 63

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 63

Ala Arg Tyr Ala Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn
1 5 10 15

<210> 64

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 64

Ala Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg
1 5 10 15

<210> 65

<211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 65
 Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser Phe
 1 5 10 15

 <210> 66
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 66
 Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser Phe Ser Gln Tyr
 1 5 10 15

 <210> 67
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 67
 Asp Gln Asn Asn Asn Arg Ala Ser Phe Ser Gln Tyr Gly Ala Gly
 1 5 10 15

 <210> 68
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 68
 Asn Asn Arg Ala Ser Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile
 1 5 10 15

 <210> 69
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 69

Ala Ser Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro
1 5 10 15

<210> 70
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 70
Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Asn
1 5 10 15

<210> 71
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 71
Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Asn Val Gln Ser
1 5 10 15

<210> 72
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 72
Leu Asp Ile Val Ala Pro Gly Val Asn Val Gln Ser Thr Tyr Pro
1 5 10 15

<210> 73
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 73
Val Ala Pro Gly Val Asn Val Gln Ser Thr Tyr Pro Gly Ser Thr
1 5 10 15

<210> 74
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 74
 Gly Val Asn Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser
 1 5 10 15

 <210> 75
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 75
 Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Asn Gly
 1 5 10 15

 <210> 76
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 76
 Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Asn Gly Thr Ser Met
 1 5 10 15

 <210> 77
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 77
 Gly Ser Thr Tyr Ala Ser Leu Asn Gly Thr Ser Met Ala Thr Pro
 1 5 10 15

 <210> 78
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 78
 Tyr Ala Ser Leu Asn Gly Thr Ser Met Ala Thr Pro His Val Ala
 1 5 10 15

<210> 79
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 79
 Leu Asn Gly Thr Ser Met Ala Thr Pro His Val Ala Gly Ala Ala
 1 5 10 15

<210> 80
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 80
 Thr Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu Val
 1 5 10 15

<210> 81
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 81
 Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu Val Lys Gln Lys
 1 5 10 15

<210> 82
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 82
 Gly Val Ala Gly Ala Ala Ala Leu Val Lys Gln Lys Asn Pro Ser
 1 5 10 15

<210> 83
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

<400> 83
Gly Ala Ala Ala Leu Val Lys Gln Lys Asn Pro Ser Trp Ser Asn
1 5 10 15

<210> 84
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 84
Ala Leu Val Lys Gln Lys Asn Pro Ser Trp Ser Asn Val Gln Ile
1 5 10 15

<210> 85
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 85
Lys Gln Lys Asn Pro Ser Trp Ser Val Asn Gln Ile Arg Asn His
1 5 10 15

<210> 86
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 86
Asn Pro Ser Trp Ser Asn Val Gln Ile Arg Asn His Leu Lys Asn
1 5 10 15

<210> 87
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 87
Trp Ser Asn Val Gln Ile Arg Asn His Leu Lys Asn Thr Ala Thr
1 5 10 15

<210> 88
<211> 15

<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 88

Val	Gln	Ile	Arg	Asn	His	Leu	Lys	Asn	Thr	Ala	Thr	Ser	Leu	Gly
1				5				10					15	

<210> 89

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 89

Arg	Asn	His	Leu	Lys	Asn	Thr	Ala	Thr	Ser	Leu	Gly	Ser	Thr	Asn
1				5				10					15	

<210> 90

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 90

Leu	Lys	Asn	Thr	Ala	Thr	Ser	Leu	Gly	Ser	Thr	Asn	Leu	Tyr	Gly
1				5				10					15	

<210> 91

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 91

Thr	Ala	Thr	Ser	Leu	Gly	Ser	Thr	Asn	Leu	Tyr	Gly	Ser	Gly	Leu
1				5				10					15	

<210> 92

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 92

Ser Leu Gly Ser Thr Asn Leu Tyr Gly Ser Gly Leu Val Asn Ala

1 5 10 15

<210> 93
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 93
 Ser Thr Asn Leu Tyr Gly Ser Gly Leu Val Asn Ala Glu Ala Ala
 1 5 10 15

<210> 94
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 94
 Asn Leu Tyr Gly Ser Gly Leu Val Asn Ala Glu Ala Ala Thr Arg
 1 5 10 15

<210> 95
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 95
 Asp Ala Glu Leu His Ile Phe Arg Val Phe Thr Asn Asn Gln Val
 1 5 10 15

<210> 96
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 96
 Pro Leu Arg Arg Ala Ser Leu Ser Leu Gly Ser Gly Phe Trp His
 1 5 10 15

<210> 97
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 <400> 97
 Arg Ala Ser Leu Ser Leu Gly Ser Gly Phe Trp His Ala Thr Gly
 1 5 10 15

<210> 98
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 <400> 98
 Leu Ser Leu Gly Ser Gly Phe Trp His Ala Thr Gly Arg His Ser
 1 5 10 15

<210> 99
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 <400> 99
 Gly Ser Gly Phe Trp His Ala Thr Gly Arg His Ser Ser Arg Arg
 1 5 10 15

<210> 100
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 <400> 100
 Phe Trp His Ala Thr Gly Arg His Ser Ser Arg Arg Leu Leu Arg
 1 5 10 15

<210> 101
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 <400> 101
 Ala Thr Gly Arg His Ser Ser Arg Arg Leu Leu Arg Ala Ile Pro
 1 5 10 15

<210> 102
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 102
 Arg His Ser Ser Arg Arg Leu Leu Arg Ala Ile Pro Arg Gln Val
 1 5 10 15

<210> 103
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 103
 Ser Arg Arg Leu Leu Arg Ala Ile Pro Arg Gln Val Ala Gln Thr
 1 5 10 15

<210> 104
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 104
 Leu Leu Arg Ala Ile Pro Arg Gln Val Ala Gln Thr Leu Gln Ala
 1 5 10 15

<210> 105
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 105
 Ala Ile Pro Arg Gln Val Ala Gln Thr Leu Gln Ala Asp Val Leu
 1 5 10 15

<210> 106
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

<400> 106
 Arg Gln Val Ala Gln Thr Leu Gln Ala Asp Val Leu Trp Gln Met
 1 5 10 15

<210> 107
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 107
 Ala Gln Thr Leu Gln Ala Asp Val Leu Trp Gln Met Gly Tyr Thr
 1 5 10 15

<210> 108
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 108
 Leu Gln Ala Asp Val Leu Trp Gln Met Gly Tyr Thr Gly Ala Asn
 1 5 10 15

<210> 109
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 109
 Asp Val Leu Trp Gln Met Gly Tyr Thr Gly Ala Asn Val Arg Val
 1 5 10 15

<210> 110
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 110
 Trp Gln Met Gly Tyr Thr Gly Ala Asn Val Arg Val Ala Val Phe
 1 5 10 15

<210> 111
 <211> 15
 <212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 111

Gly Tyr Thr Gly Ala Asn Val Arg Val Ala Val Phe Asp Thr Gly
1 5 10 15

<210> 112

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 112

Gly Ala Asn Val Arg Val Ala Val Phe Asp Thr Gly Leu Ser Glu
1 5 10 15

<210> 113

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 113

Val Arg Val Ala Val Phe Asp Thr Gly Leu Ser Glu Lys His Pro
1 5 10 15

<210> 114

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 114

Ala Val Phe Asp Thr Gly Leu Ser Glu Lys His Pro His Phe Lys
1 5 10 15

<210> 115

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 115

Asp Thr Gly Leu Ser Glu Lys His Pro His Phe Lys Asn Val Lys
1 5 10 15

<210> 116
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 116
Leu Ser Glu Lys His Pro His Phe Lys Asn Val Lys Glu Arg Thr
1 5 10 15

<210> 117
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 117
Lys His Pro His Phe Lys Asn Val Lys Glu Arg Thr Asn Trp Thr
1 5 10 15

<210> 118
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 118
His Phe Lys Asn Val Lys Glu Arg Thr Asn Trp Thr Asn Glu Arg
1 5 10 15

<210> 119
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 119
Asn Val Lys Glu Arg Thr Asn Trp Thr Asn Glu Arg Thr Leu Asp
1 5 10 15

<210> 120
<211> 15
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 120

Glu	Arg	Thr	Asn	Trp	Thr	Asn	Glu	Arg	Thr	Leu	Asp	Asp	Gly	Leu
1				5					10					15

<210> 121

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 121

Asn	Trp	Thr	Asn	Glu	Arg	Thr	Leu	Asp	Asp	Gly	Leu	Gly	His	Gly
1				5					10					15

<210> 122

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 122

Asn	Glu	Arg	Thr	Leu	Asp	Asp	Gly	Leu	Gly	His	Gly	Thr	Phe	Val
1				5					10					15

<210> 123

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 123

Thr	Leu	Asp	Asp	Gly	Leu	Gly	His	Gly	Thr	Phe	Val	Ala	Gly	Val
1				5					10					15

<210> 124

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 124

Asp	Gly	Leu	Gly	His	Gly	Thr	Phe	Val	Ala	Gly	Val	Ile	Ala	Ser
1				5					10					15

<210> 125

<211> 15
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 125

Gly His Gly Thr Phe Val Ala Gly Val Ile Ala Ser Met Arg Glu
1 5 10 15

<210> 126

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 126

Thr Phe Val Ala Gly Val Ile Ala Ser Met Arg Glu Cys Gln Gly
1 5 10 15

<210> 127

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 127

Ala Gly Val Ile Ala Ser Met Arg Glu Cys Gln Gly Phe Ala Pro
1 5 10 15

<210> 128

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 128

Ile Ala Ser Met Arg Glu Cys Gln Gly Phe Ala Pro Asp Ala Glu
1 5 10 15

<210> 129

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 129

Met Arg Glu Cys Gln Gly Phe Ala Pro Asp Ala Glu Leu His Ile
 1 5 10 15

<210> 130
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 130
 Cys Gln Gly Phe Ala Pro Asp Ala Glu Leu His Ile Phe Arg Val
 1 5 10 15

<210> 131
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 131
 Phe Ala Pro Asp Ala Glu Leu His Ile Phe Arg Val Phe Thr Asn
 1 5 10 15

<210> 132
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 132
 Asp Ala Glu Leu His Ile Phe Arg Val Phe Thr Asn Asn Gln Val
 1 5 10 15

<210> 133
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 133
 Leu His Ile Phe Arg Val Phe Thr Asn Asn Gln Val Ser Tyr Thr
 1 5 10 15

<210> 134
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 <400> 134
 Phe Arg Val Phe Thr Asn Asn Gln Val Ser Tyr Thr Ser Trp Phe
 1 5 10 15

<210> 135
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 <400> 135
 Phe Thr Asn Asn Gln Val Ser Tyr Thr Ser Trp Phe Leu Asp Ala
 1 5 10 15

<210> 136
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 <400> 136
 Asn Gln Val Ser Tyr Thr Ser Trp Phe Leu Asp Ala Phe Asn Tyr
 1 5 10 15

<210> 137
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 <400> 137
 Ser Tyr Thr Ser Trp Phe Leu Asp Ala Phe Asn Tyr Ala Ile Leu
 1 5 10 15

<210> 138
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 <400> 138
 Ser Trp Phe Leu Asp Ala Phe Asn Tyr Ala Ile Leu Lys Lys Ile
 1 5 10 15

<210> 139
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 139
 Leu Asp Ala Phe Asn Tyr Ala Ile Leu Lys Lys Ile Asp Val Leu
 1 5 10 15

 <210> 140
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 140
 Phe Asn Tyr Ala Ile Leu Lys Lys Ile Asp Val Leu Asn Leu Ser
 1 5 10 15

 <210> 141
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 141
 Ala Ile Leu Lys Lys Ile Asp Val Leu Asn Leu Ser Ile Gly Gly
 1 5 10 15

 <210> 142
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 142
 Lys Lys Ile Asp Val Leu Asn Leu Ser Ile Gly Gly Pro Asp Phe
 1 5 10 15

 <210> 143
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

<400> 143
Asp Val Leu Asn Leu Ser Ile Gly Gly Pro Asp Phe Met Asp His
1 5 10 15

<210> 144
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 144
Asn Leu Ser Ile Gly Gly Pro Asp Phe Met Asp His Pro Phe Val
1 5 10 15

<210> 145
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 145
Ile Gly Gly Pro Asp Phe Met Asp His Pro Phe Val Asp Lys Val
1 5 10 15

<210> 146
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 146
Pro Asp Phe Met Asp His Pro Phe Val Asp Lys Val Trp Glu Leu
1 5 10 15

<210> 147
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 147
Met Asp His Pro Phe Val Asp Lys Val Trp Glu Leu Thr Ala Asn
1 5 10 15

<210> 148
<211> 15

<212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 148
 Pro Phe Val Asp Lys Val Trp Glu Leu Thr Ala Asn Asn Val Ile
 1 5 10 15

<210> 149
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 149
 Asp Lys Val Trp Glu Leu Thr Ala Asn Asn Val Ile Met Val Ser
 1 5 10 15

<210> 150
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 150
 Trp Glu Leu Thr Ala Asn Asn Val Ile Met Val Ser Ala Ile Gly
 1 5 10 15

<210> 151
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 151
 Thr Ala Asn Asn Val Ile Met Val Ser Ala Ile Gly Asn Asp Gly
 1 5 10 15

<210> 152
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 152
 Asn Val Ile Met Val Ser Ala Ile Gly Asn Asp Gly Pro Leu Tyr

1	5	10	15
---	---	----	----

<210> 153
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 153
 Met Val Ser Ala Ile Gly Asn Asp Gly Pro Leu Tyr Gly Thr Ile
 1 5 10 15

<210> 154
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 154
 Ala Ile Gly Asn Asp Gly Pro Leu Tyr Gly Thr Leu Asn Asn Pro
 1 5 10 15

<210> 155
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 155
 Asn Asp Gly Pro Leu Tyr Gly Thr Leu Asn Asn Pro Ala Asp Gln
 1 5 10 15

<210> 156
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 156
 Pro Leu Tyr Gly Thr Leu Asn Asn Pro Ala Asp Gln Met Asp Val
 1 5 10 15

<210> 157
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 157
 Gly Thr Leu Asn Asn Pro Ala Asp Gln Met Asp Val Ile Gly Val
 1 5 10 15

<210> 158
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 158
 Asn Asn Pro Ala Asp Gln Met Asp Val Ile Gly Val Gly Gly Ile
 1 5 10 15

<210> 159
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 159
 Ala Asp Gln Met Asp Val Ile Gly Val Gly Gly Ile Asp Phe Glu
 1 5 10 15

<210> 160
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 160
 Met Asp Val Ile Gly Val Gly Gly Ile Asp Phe Glu Asp Asn Ile
 1 5 10 15

<210> 161
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 161
 Ile Gly Val Gly Gly Ile Asp Phe Glu Asp Asn Ile Ala Arg Phe
 1 5 10 15

<210> 162
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 162
 Gly Gly Ile Asp Phe Glu Asp Asn Ile Ala Arg Phe Ser Ser Arg
 1 5 10 15

 <210> 163
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 163
 Asp Phe Glu Asp Asn Ile Ala Arg Phe Ser Ser Arg Gly Met Thr
 1 5 10 15

 <210> 164
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 164
 Asp Asn Ile Ala Arg Phe Ser Ser Arg Gly Met Thr Thr Trp Glu
 1 5 10 15

 <210> 165
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 165
 Ala Arg Phe Ser Ser Arg Gly Met Thr Thr Trp Glu Leu Pro Gly
 1 5 10 15

 <210> 166
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

<400> 166
Ser Ser Arg Gly Met Thr Thr Trp Glu Leu Pro Gly Gly Tyr Gly
1 5 10 15

<210> 167
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 167
Gly Met Thr Thr Trp Glu Leu Pro Gly Gly Tyr Gly Arg Met Lys
1 5 10 15

<210> 168
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 168
Thr Trp Glu Leu Pro Gly Gly Tyr Gly Arg Met Lys Pro Asp Ile
1 5 10 15

<210> 169
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 169
Leu Pro Gly Gly Tyr Gly Arg Met Lys Pro Asp Ile Val Thr Tyr
1 5 10 15

<210> 170
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 170
Gly Tyr Gly Arg Met Lys Pro Asp Ile Val Thr Tyr Gly Ala Gly
1 5 10 15

<210> 171
<211> 15
<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 171

Arg Met Lys Pro Asp Ile Val Thr Tyr Gly Ala Gly Val Arg Gly
1 5 10 15

<210> 172

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 172

Pro Asp Ile Val Thr Tyr Gly Ala Gly Val Arg Gly Ser Gly Val
1 5 10 15

<210> 173

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 173

Val Thr Tyr Gly Ala Gly Val Arg Gly Ser Gly Val Lys Gly Gly
1 5 10 15

<210> 174

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 174

Gly Ala Gly Val Arg Gly Ser Gly Val Lys Gly Gly Cys Arg Ala
1 5 10 15

<210> 175

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 175

Val Arg Gly Ser Gly Val Lys Gly Gly Cys Arg Ala Leu Ser Gly
1 5 10 15

<210> 176
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 176
Ser Gly Val Lys Gly Gly Cys Arg Ala Leu Ser Gly Thr Ser Val
1 5 10 15

<210> 177
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 177
Lys Gly Gly Cys Arg Ala Leu Ser Gly Thr Ser Val Ala Ser Pro
1 5 10 15

<210> 178
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 178
Cys Arg Ala Leu Ser Gly Thr Ser Val Ala Ser Pro Val Val Ala
1 5 10 15

<210> 179
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 179
Leu Ser Gly Thr Ser Val Ala Ser Pro Val Val Ala Gly Ala Val
1 5 10 15

<210> 180
<211> 15
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 180

Thr Ser Val Ala Ser Pro Val Val Ala Gly Ala Val Thr Leu Leu
1 5 10 15

<210> 181

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 181

Ala Ser Pro Val Val Ala Gly Ala Val Thr Leu Leu Val Ser Thr
1 5 10 15

<210> 182

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 182

Val Val Ala Gly Ala Val Thr Leu Leu Val Ser Thr Val Gln Lys
1 5 10 15

<210> 183

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 183

Gly Ala Val Thr Leu Leu Val Ser Thr Val Gln Lys Arg Glu Leu
1 5 10 15

<210> 184

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 184

Thr Leu Leu Val Ser Thr Val Gln Lys Arg Glu Leu Val Asn Pro
1 5 10 15

<210> 185

<211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 185
 Val Ser Thr Val Gln Lys Arg Glu Leu Val Asn Pro Ala Ser Met
 1 5 10 15

 <210> 186
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 186
 Val Gln Lys Arg Glu Leu Val Asn Pro Ala Ser Met Lys Gln Ala
 1 5 10 15

 <210> 187
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 187
 Arg Glu Leu Val Asn Pro Ala Ser Met Lys Gln Ala Leu Ile Ala
 1 5 10 15

 <210> 188
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 188
 Val Asn Pro Ala Ser Met Lys Gln Ala Leu Ile Ala Ser Ala Arg
 1 5 10 15

 <210> 189
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 189

Ala Ser Met Lys Gln Ala Leu Ile Ala Ser Ala Arg Arg Leu Pro
 1 5 10 15

<210> 190
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 190
 Lys Gln Ala Leu Ile Ala Ser Ala Arg Arg Leu Pro Gly Val Asn
 1 5 10 15

<210> 191
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 191
 Leu Ile Ala Ser Ala Arg Arg Leu Pro Gly Val Asn Met Phe Glu
 1 5 10 15

<210> 192
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 192
 Ser Ala Arg Arg Leu Pro Gly Val Asn Met Phe Glu Gln Gly His
 1 5 10 15

<210> 193
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 193
 Arg Leu Pro Gly Val Asn Met Phe Glu Gln Gly His Gly Lys Leu
 1 5 10 15

<210> 194
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 194
 Gly Val Asn Met Phe Glu Gln Gly His Gly Lys Leu Asp Leu Leu
 1 5 10 15

 <210> 195
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 195
 Met Phe Glu Gln Gly His Gly Lys Leu Asp Leu Leu Arg Ala Tyr
 1 5 10 15

 <210> 196
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 196
 Gln Gly His Gly Lys Leu Asp Leu Leu Arg Ala Tyr Gln Ile Leu
 1 5 10 15

 <210> 197
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 197
 Gly Lys Leu Asp Leu Leu Arg Ala Tyr Gln Ile Leu Asn Ser Tyr
 1 5 10 15

 <210> 198
 <211> 15
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

 <400> 198
 Asp Leu Leu Arg Ala Tyr Gln Ile Leu Asn Ser Tyr Lys Pro Gln
 1 5 10 15

<210> 199
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 199
Arg Ala Tyr Gln Ile Leu Asn Ser Tyr Lys Pro Gln Ala Ser Leu
1 5 10 15

<210> 200
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 200
Gln Ile Leu Asn Ser Tyr Lys Pro Gln Ala Ser Leu Ser Pro Ser
1 5 10 15

<210> 201
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 201
Asn Ser Tyr Lys Pro Gln Ala Ser Leu Ser Pro Ser Tyr Ile Asp
1 5 10 15

<210> 202
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 202
Lys Pro Gln Ala Ser Leu Ser Pro Ser Tyr Ile Asp Leu Thr Glu
1 5 10 15

<210> 203
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 203
 Ala Ser Leu Ser Pro Ser Tyr Ile Asp Leu Thr Glu Cys Pro Tyr
 1 5 10 15

<210> 204
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 204
 Ser Pro Ser Tyr Ile Asp Leu Thr Glu Cys Pro Tyr Met Trp Pro
 1 5 10 15

<210> 205
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 205
 Tyr Ile Asp Leu Thr Glu Cys Pro Tyr Met Trp Pro Tyr Cys Ser
 1 5 10 15

<210> 206
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 206
 Leu Thr Glu Cys Pro Tyr Met Trp Pro Tyr Cys Ser Gln Pro Ile
 1 5 10 15

<210> 207
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 207
 Cys Pro Tyr Met Trp Pro Tyr Cys Ser Gln Pro Ile Tyr Tyr Gly
 1 5 10 15

<210> 208
 <211> 1052

<212> PRT
<213> Homo sapiens

<400> 208

Met	Lys	Leu	Val	Asn	Ile	Trp	Leu	Leu	Leu	Leu	Val	Val	Leu	Leu	Cys	
1				5				10						15		
Gly	Lys	Lys	His	Leu	Gly	Asp	Arg	Leu	Glu	Lys	Lys	Ser	Phe	Glu	Lys	
			20					25					30			
Ala	Pro	Cys	Pro	Gly	Cys	Ser	His	Leu	Thr	Leu	Lys	Val	Glu	Phe	Ser	
		35					40					45				
Ser	Thr	Val	Val	Glu	Tyr	Glu	Tyr	Ile	Val	Ala	Phe	Asn	Gly	Tyr	Phe	
	50					55					60					
Thr	Ala	Lys	Ala	Arg	Asn	Ser	Phe	Ile	Ser	Ser	Ala	Leu	Lys	Ser	Ser	
65					70					75					80	
Glu	Val	Asp	Asn	Trp	Arg	Ile	Ile	Pro	Arg	Asn	Asn	Pro	Ser	Ser	Asp	
			85						90					95		
Tyr	Pro	Ser	Asp	Phe	Glu	Val	Ile	Gln	Ile	Lys	Glu	Lys	Gln	Lys	Ala	
			100					105					110			
Gly	Leu	Leu	Thr	Leu	Glu	Asp	His	Pro	Asn	Ile	Lys	Arg	Val	Thr	Pro	
	115						120					125				
Gln	Arg	Lys	Val	Phe	Arg	Ser	Leu	Lys	Tyr	Ala	Glu	Ser	Asp	Pro	Thr	
	130					135					140					
Val	Pro	Cys	Asn	Glu	Thr	Arg	Trp	Ser	Gln	Lys	Trp	Gln	Ser	Ser	Arg	
145					150					155					160	
Pro	Leu	Arg	Arg	Ala	Ser	Leu	Ser	Leu	Gly	Ser	Gly	Phe	Trp	His	Ala	
				165					170					175		
Thr	Gly	Arg	His	Ser	Ser	Arg	Arg	Leu	Leu	Arg	Ala	Ile	Pro	Arg	Gln	
			180					185					190			
Val	Ala	Gln	Thr	Leu	Gln	Ala	Asp	Val	Leu	Trp	Gln	Met	Gly	Tyr	Thr	
		195					200					205				
Gly	Ala	Asn	Val	Arg	Val	Ala	Val	Phe	Asp	Thr	Gly	Leu	Ser	Glu	Lys	
	210					215					220					
His	Pro	His	Phe	Lys	Asn	Val	Lys	Glu	Arg	Thr	Asn	Trp	Thr	Asn	Glu	
225					230					235					240	
Arg	Thr	Leu	Asp	Asp	Gly	Leu	Gly	His	Gly	Thr	Phe	Val	Ala	Gly	Val	
			245						250					255		
Ile	Ala	Ser	Met	Arg	Glu	Cys	Gln	Gly	Phe	Ala	Pro	Asp	Ala	Glu	Leu	
		260						265					270			
His	Ile	Phe	Arg	Val	Phe	Thr	Asn	Asn	Gln	Val	Ser	Tyr	Thr	Ser	Trp	
	275						280					285				
Phe	Leu	Asp	Ala	Phe	Asn	Tyr	Ala	Ile	Leu	Lys	Lys	Ile	Asp	Val	Leu	
	290					295					300					

Asn Leu Ser Ile Gly Gly Pro Asp Phe Met Asp His Pro Phe Val Asp
 305 310 315 320
 Lys Val Trp Glu Leu Thr Ala Asn Asn Val Ile Met Val Ser Ala Ile
 325 330 335
 Gly Asn Asp Gly Pro Leu Tyr Gly Thr Leu Asn Asn Pro Ala Asp Gln
 340 345 350
 Met Asp Val Ile Gly Val Gly Gly Ile Asp Phe Glu Asp Asn Ile Ala
 355 360 365
 Arg Phe Ser Ser Arg Gly Met Thr Thr Trp Glu Leu Pro Gly Gly Tyr
 370 375 380
 Gly Arg Met Lys Pro Asp Ile Val Thr Tyr Gly Ala Gly Val Arg Gly
 385 390 395 400
 Ser Gly Val Lys Gly Gly Cys Arg Ala Leu Ser Gly Thr Ser Val Ala
 405 410 415
 Ser Pro Val Val Ala Gly Ala Val Thr Leu Leu Val Ser Thr Val Gln
 420 425 430
 Lys Arg Glu Leu Val Asn Pro Ala Ser Met Lys Gln Ala Leu Ile Ala
 435 440 445
 Ser Ala Arg Arg Leu Pro Gly Val Asn Met Phe Glu Gln Gly His Gly
 450 455 460
 Lys Leu Asp Leu Leu Arg Ala Tyr Gln Ile Leu Asn Ser Tyr Lys Pro
 465 470 475 480
 Gln Ala Ser Leu Ser Pro Ser Tyr Ile Asp Leu Thr Glu Cys Pro Tyr
 485 490 495
 Met Trp Pro Tyr Cys Ser Gln Pro Ile Tyr Tyr Gly Gly Met Pro Thr
 500 505 510
 Val Val Asn Val Thr Ile Leu Asn Gly Met Gly Val Thr Gly Arg Ile
 515 520 525
 Val Asp Lys Pro Asp Trp Gln Pro Tyr Leu Pro Gln Asn Gly Asp Asn
 530 535 540
 Ile Glu Val Ala Phe Ser Tyr Ser Ser Val Leu Trp Pro Trp Ser Gly
 545 550 555 560
 Tyr Leu Ala Ile Ser Ile Ser Val Thr Lys Lys Ala Ala Ser Trp Glu
 565 570 575
 Gly Ile Ala Gln Gly His Val Met Ile Thr Val Ala Ser Pro Ala Glu
 580 585 590
 Thr Glu Ser Lys Asn Gly Ala Glu Gln Thr Ser Thr Val Lys Leu Pro
 595 600 605
 Ile Lys Val Lys Ile Ile Pro Thr Pro Pro Arg Ser Lys Arg Val Leu
 610 615 620

Trp Asp Gln Tyr His Asn Leu Arg Tyr Pro Pro Gly Tyr Phe Pro Arg
 625 630 635 640
 Asp Asn Leu Arg Met Lys Asn Asp Pro Leu Asp Trp Asn Gly Asp His
 645 650 655
 Ile His Thr Asn Phe Arg Asp Met Tyr Gln His Leu Arg Ser Met Gly
 660 665 670
 Tyr Phe Val Glu Val Leu Gly Ala Pro Phe Thr Cys Phe Asp Ala Ser
 675 680 685
 Gln Tyr Gly Thr Leu Leu Met Val Asp Ser Glu Glu Glu Tyr Phe Pro
 690 695 700
 Glu Glu Ile Ala Lys Leu Arg Arg Asp Val Asp Asn Gly Leu Ser Leu
 705 710 715 720
 Val Ile Phe Ser Asp Trp Tyr Asn Thr Ser Val Met Arg Lys Val Lys
 725 730 735
 Phe Tyr Asp Glu Asn Thr Arg Gln Trp Trp Met Pro Asp Thr Gly Gly
 740 745 750
 Ala Asn Ile Pro Ala Leu Asn Glu Leu Leu Ser Val Trp Asn Met Gly
 755 760 765
 Phe Ser Asp Gly Leu Tyr Glu Gly Glu Phe Thr Leu Ala Asn His Asp
 770 775 780
 Met Tyr Tyr Ala Ser Gly Cys Ser Ile Ala Lys Phe Pro Glu Asp Gly
 785 790 795 800
 Val Val Ile Thr Gln Thr Phe Lys Asp Gln Gly Leu Glu Val Leu Lys
 805 810 815
 Gln Glu Thr Ala Val Val Glu Asn Val Pro Ile Leu Gly Leu Tyr Gln
 820 825 830
 Ile Pro Ala Glu Gly Gly Gly Arg Ile Val Leu Tyr Gly Asp Ser Asn
 835 840 845
 Cys Leu Asp Asp Ser His Arg Gln Lys Asp Cys Phe Trp Leu Leu Asp
 850 855 860
 Ala Leu Leu Gln Tyr Thr Ser Tyr Gly Val Thr Pro Pro Ser Leu Ser
 865 870 875 880
 His Ser Gly Asn Arg Gln Arg Pro Pro Ser Gly Ala Gly Ser Val Thr
 885 890 895
 Pro Glu Arg Met Glu Gly Asn His Leu His Arg Tyr Ser Lys Val Leu
 900 905 910
 Glu Ala His Leu Gly Asp Pro Lys Pro Arg Pro Leu Pro Ala Cys Pro
 915 920 925
 Arg Leu Ser Trp Ala Lys Pro Gln Pro Leu Asn Glu Thr Ala Pro Ser
 930 935 940

Asn Leu Trp Lys His Gln Lys Leu Leu Ser Ile Asp Leu Asp Lys Val
 945 950 955 960
 Val Leu Pro Asn Phe Arg Ser Asn Arg Pro Gln Val Arg Pro Leu Ser
 965 970 975
 Pro Gly Glu Ser Gly Ala Trp Asp Ile Pro Gly Gly Ile Met Pro Gly
 980 985 990
 Arg Tyr Asn Gln Glu Val Gly Gln Thr Ile Pro Val Phe Ala Phe Leu
 995 1000 1005
 Gly Ala Met Val Val Leu Ala Phe Phe Val Val Gln Ile Asn Lys Ala
 1010 1015 1020
 Lys Ser Arg Pro Lys Arg Arg Lys Pro Arg Val Lys Arg Pro Gln Leu
 1025 1030 1035 1040
 Met Gln Gln Val His Pro Pro Lys Thr Pro Ser Val
 1045 1050

<210> 209
 <211> 280
 <212> PRT
 <213> Homo sapiens

<400> 209
 Arg Ala Ile Pro Arg Gln Val Ala Gln Thr Leu Gln Ala Asp Val Leu
 1 5 10 15
 Trp Gln Met Gly Tyr Thr Gly Ala Asn Val Arg Val Ala Val Phe Asp
 20 25 30
 Thr Gly Leu Ser Glu Lys His Pro His Phe Lys Asn Val Lys Glu Arg
 35 40 45
 Thr Asn Trp Thr Asn Glu Arg Thr Leu Asp Asp Gly Leu Gly His Gly
 50 55 60
 Thr Phe Val Ala Gly Val Ile Ala Ser Met Arg Glu Cys Gln Gly Phe
 65 70 75 80
 Ala Pro Asp Ala Glu Leu His Ile Phe Arg Val Phe Thr Asn Asn Gln
 85 90 95
 Val Ser Tyr Thr Ser Trp Phe Leu Asp Ala Phe Asn Tyr Ala Ile Leu
 100 105 110
 Lys Lys Ile Asp Val Leu Asn Leu Ser Ile Gly Gly Pro Asp Phe Met
 115 120 125
 Asp His Pro Phe Val Asp Lys Val Trp Glu Leu Thr Ala Asn Asn Val
 130 135 140
 Ile Met Val Ser Ala Ile Gly Asn Asp Gly Pro Leu Tyr Gly Thr Leu
 145 150 155 160
 Asn Asn Pro Ala Asp Gln Met Asp Val Ile Gly Val Gly Gly Ile Asp

165										170					175						
Phe	Glu	Asp	Asn	Ile	Ala	Arg	Phe	Ser	Ser	Arg	Gly	Met	Thr	Thr	Trp						
			180					185					190								
Glu	Leu	Pro	Gly	Gly	Tyr	Gly	Arg	Met	Lys	Pro	Asp	Ile	Val	Thr	Tyr						
		195					200					205									
Gly	Ala	Gly	Val	Arg	Gly	Ser	Gly	Val	Lys	Gly	Gly	Cys	Arg	Ala	Leu						
	210					215					220										
Ser	Gly	Thr	Ser	Val	Ala	Ser	Pro	Val	Val	Ala	Gly	Ala	Val	Thr	Leu						
225					230					235					240						
Leu	Val	Ser	Thr	Val	Gln	Lys	Arg	Glu	Leu	Val	Asn	Pro	Ala	Ser	Met						
				245					250					255							
Lys	Gln	Ala	Leu	Ile	Ala	Ser	Ala	Arg	Arg	Leu	Pro	Gly	Val	Asn	Met						
			260					265					270								
Phe	Glu	Gln	Gly	His	Gly	Lys	Leu														
		275					280														

<210> 210
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 210
 Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val
 1 5 10 15

<210> 211
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 211
 Ala Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val
 1 5 10 15

<210> 212
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 212
 Gly Ala Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val

1	5	10	15
---	---	----	----

<210> 213
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 213
 Gly Ser Ala Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val
 1 5 10 15

<210> 214
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 214
 Gly Ser Ile Ala Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val
 1 5 10 15

<210> 215
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 215
 Gly Ser Ile Ser Ala Pro Ala Arg Tyr Ala Asn Ala Met Ala Val
 1 5 10 15

<210> 216
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 216
 Gly Ser Ile Ser Tyr Ala Ala Arg Tyr Ala Asn Ala Met Ala Val
 1 5 10 15

<210> 217
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 217
Gly Ser Ile Ser Tyr Pro Ala Ala Tyr Ala Asn Ala Met Ala Val
1 5 10 15

<210> 218
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 218
Gly Ser Ile Ser Tyr Pro Ala Arg Ala Ala Asn Ala Met Ala Val
1 5 10 15

<210> 219
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 219
Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Ala Ala Met Ala Val
1 5 10 15

<210> 220
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 220
Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Ala Ala Val
1 5 10 15

<210> 221
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 221
Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Ala
1 5 10 15

<210> 222
 <211> 15
 <212> PRT
 <213> Humicola insolens

<400> 222
 Pro Gly Gly Val Ala Tyr Ser Cys Ala Asp Gln Thr Pro Trp Ala
 1 5 10 15

<210> 223
 <211> 15
 <212> PRT
 <213> Humicola insolens

<400> 223
 Cys Gly Trp Ala Lys Lys Ala Pro Val Asn Gln Pro Val Phe Ser
 1 5 10 15

<210> 224
 <211> 276
 <212> PRT
 <213> Humicola insolens

<400> 224
 Met Arg Ser Ser Pro Leu Leu Pro Ser Ala Val Val Ala Ala Leu Pro
 1 5 10 15

 Val Leu Ala Leu Ala Ala Asp Gly Arg Ser Thr Arg Tyr Trp Asp Cys
 20 25 30

 Cys Lys Pro Ser Cys Gly Trp Ala Lys Lys Ala Pro Val Asn Gln Pro
 35 40 45

 Val Phe Ser Cys Asn Ala Asn Phe Gln Arg Ile Thr Asp Phe Asp Ala
 50 55 60

 Lys Ser Gly Cys Glu Pro Gly Gly Val Ala Tyr Ser Cys Ala Asp Gln
 65 70 75 80

 Thr Pro Trp Ala Val Asn Asp Asp Phe Ala Leu Gly Phe Ala Ala Thr
 85 90 95

 Ser Ile Ala Gly Ser Asn Glu Ala Gly Trp Cys Cys Ala Cys Tyr Glu
 100 105 110

 Leu Thr Phe Thr Ser Gly Pro Val Ala Gly Lys Lys Met Val Val Gln
 115 120 125

 Ser Thr Ser Thr Gly Gly Asp Leu Gly Ser Asn His Phe Asp Leu Asn
 130 135 140

 Ile Pro Gly Gly Gly Val Gly Ile Phe Asp Gly Cys Thr Pro Gln Phe
 145 150 155 160

 Gly Gly Leu Pro Gly Gln Arg Tyr Gly Gly Ile Ser Ser Arg Asn Glu
 165 170 175

 Cys Asp Arg Phe Pro Asp Ala Leu Lys Pro Gly Cys Tyr Trp Arg Phe

180 185 190
 Asp Trp Phe Lys Asn Ala Asp Asn Pro Ser Phe Ser Phe Arg Gln Val
 195 200 205
 Gln Cys Pro Ala Glu Leu Val Ala Arg Thr Gly Cys Arg Arg Asn Asp
 210 215 220
 Asp Gly Asn Phe Pro Ala Val Gln Ile Pro Ser Ser Ser Thr Ser Ser
 225 230 235 240
 Pro Val Asn Gln Pro Thr Ser Thr Ser Thr Thr Ser Thr Ser Thr Thr
 245 250 255
 Ser Ser Pro Pro Val Gln Pro Thr Thr Pro Ser Gly Cys Thr Ala Glu
 260 265 270
 Arg Trp Ala Gln
 275

<210> 225
 <211> 18
 <212> PRT
 <213> Thermomyces lanuginosus

<400> 225
 Gly Asp Val Thr Gly Phe Leu Ala Leu Asp Asn Thr Asn Lys Leu Ile
 1 5 10 15

Val Leu

<210> 226
 <211> 15
 <212> PRT
 <213> Thermomyces lanuginosus

<400> 226
 Ser Ile Glu Asn Trp Ile Gly Asn Leu Asn Phe Asp Leu Lys Glu
 1 5 10 15

<210> 227
 <211> 291
 <212> PRT
 <213> Thermomyces lanuginosus

<400> 227
 Met Arg Ser Ser Leu Val Leu Phe Phe Val Ser Ala Trp Thr Ala Leu
 1 5 10 15

Ala Ser Pro Ile Arg Arg Glu Val Ser Gln Asp Leu Phe Asn Gln Phe
 20 25 30

Asn Leu Phe Ala Gln Tyr Ser Ala Ala Ala Tyr Cys Gly Lys Asn Asn
 35 40 45

Asp Ala Pro Ala Gly Thr Asn Ile Thr Cys Thr Gly Asn Ala Cys Pro

50	55	60
Glu Val Glu Lys Ala Asp 65	Ala Thr Phe Leu Tyr 70	Ser Phe Glu Asp Ser 75 80
Gly Val Gly Asp Val Thr Gly Phe Leu Ala Leu Asp Asn Thr Asn Lys 85		90 95
Leu Ile Val Leu Ser Phe Arg Gly Ser Arg Ser Ile Glu Asn Trp Ile 100		105 110
Gly Asn Leu Asn Phe Asp Leu Lys Glu Ile Asn Asp Ile Cys Ser Gly 115		120 125
Cys Arg Gly His Asp Gly Phe Thr Ser Ser Trp Arg Ser Val Ala Asp 130		135 140
Thr Leu Arg Gln Lys Val Glu Asp Ala Val Arg Glu His Pro Asp Tyr 145		150 155 160
Arg Val Val Phe Thr Gly His Ser Leu Gly Gly Ala Leu Ala Thr Val 165		170 175
Ala Gly Ala Asp Leu Arg Gly Asn Gly Tyr Asp Ile Asp Val Phe Ser 180		185 190
Tyr Gly Ala Pro Arg Val Gly Asn Arg Ala Phe Ala Glu Phe Leu Thr 195		200 205
Val Gln Thr Gly Gly Thr Leu Tyr Arg Ile Thr His Thr Asn Asp Ile 210		215 220
Val Pro Arg Leu Pro Pro Arg Glu Phe Gly Tyr Ser His Ser Ser Pro 225		230 235 240
Glu Tyr Trp Ile Lys Ser Gly Thr Leu Val Pro Val Thr Arg Asn Asp 245		250 255
Ile Val Lys Ile Glu Gly Ile Asp Ala Thr Gly Gly Asn Asn Gln Pro 260		265 270
Asn Ile Pro Asp Ile Pro Ala His Leu Trp Tyr Phe Gly Leu Ile Gly 275		280 285
Thr Cys Leu 290		

<210> 228
 <211> 15
 <212> PRT
 <213> Streptomyces plicatus

<400> 228
 Ile Lys Val Leu Leu Ser Val Leu Gly Asn His Gln Gly Ala Gly
 1 5 10 15

<210> 229
 <211> 313

<212> PRT

<213> Streptomyces plicatus

<400> 229

Met Phe Thr Pro Val Arg Arg Arg Val Arg Thr Ala Ala Leu Ala Leu
1 5 10 15

Ser Ala Ala Ala Ala Leu Val Leu Gly Ser Thr Ala Ala Ser Gly Ala
20 25 30

Ser Ala Thr Pro Ser Pro Ala Pro Ala Pro Ala Pro Val Lys
35 40 45

Gln Gly Pro Thr Ser Val Ala Tyr Val Glu Val Asn Asn Asn Ser Met
50 55 60

Leu Asn Val Gly Lys Tyr Thr Leu Ala Asp Gly Gly Gly Asn Ala Phe
65 70 75 80

Asp Val Ala Val Ile Phe Ala Ala Asn Ile Asn Tyr Asp Thr Gly Thr
85 90 95

Lys Thr Ala Tyr Leu His Phe Asn Glu Asn Val Gln Arg Val Leu Asp
100 105 110

Asn Ala Val Thr Gln Ile Arg Pro Leu Gln Gln Gln Gly Ile Lys Val
115 120 125

Leu Leu Ser Val Leu Gly Asn His Gln Gly Ala Gly Phe Ala Asn Phe
130 135 140

Pro Ser Gln Gln Ala Ala Ser Ala Phe Ala Lys Gln Leu Ser Asp Ala
145 150 155 160

Val Ala Lys Tyr Gly Leu Asp Gly Val Asp Phe Asp Asp Glu Tyr Ala
165 170 175

Glu Tyr Gly Asn Asn Gly Thr Ala Gln Pro Asn Asp Ser Ser Phe Val
180 185 190

His Leu Val Thr Ala Leu Arg Ala Asn Met Pro Asp Lys Ile Ile Ser
195 200 205

Leu Tyr Asn Ile Gly Pro Ala Ala Ser Arg Leu Ser Tyr Gly Gly Val
210 215 220

Asp Val Ser Asp Lys Phe Asp Tyr Ala Trp Asn Pro Tyr Tyr Gly Thr
225 230 235 240

Trp Gln Val Pro Gly Ile Ala Leu Pro Lys Ala Gln Leu Ser Pro Ala
245 250 255

Ala Val Glu Ile Gly Arg Thr Ser Arg Ser Thr Val Ala Asp Leu Ala
260 265 270

Arg Arg Thr Val Asp Glu Gly Tyr Gly Val Tyr Leu Thr Tyr Asn Leu
275 280 285

Asp Gly Gly Asp Arg Thr Ala Asp Val Ser Ala Phe Thr Arg Glu Leu
290 295 300

Tyr Gly Ser Glu Ala Val Arg Thr Pro
305 310

<210> 230
<211> 15
<212> PRT
<213> Bacillus amyloliquefaciens

<400> 230
Gly Thr Val Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val
1 5 10 15

<210> 231
<211> 15
<212> PRT
<213> Bacillus amyloliquefaciens

<400> 231
Asn Gly Ile Glu Trp Ala Ile Ala Asn Asn Met Asp Val Ile Asn
1 5 10 15

<210> 232
<211> 15
<212> PRT
<213> Bacillus lentus

<400> 232
Thr Gly Ser Gly Val Lys Val Ala Val Leu Asp Thr Gly Ile Ser
1 5 10 15

<210> 233
<211> 15
<212> PRT
<213> Bacillus lentus

<400> 233
Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser
1 5 10 15

<210> 234
<211> 17
<212> PRT
<213> Bacillus lentus

<400> 234
Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val Gly
1 5 10 15

Ala

<210> 235
<211> 15

<212> PRT
<213> Bacillus lentus

<400> 235
Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Asn Val Gln Ser
1 5 10 15

<210> 236
<211> 272
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Hybrid of
Bacillus lentus and Bacillus amyloliquefaciens

<400> 236
Ala Gln Ser Val Pro Trp Gly Ile Ser Arg Val Gln Ala Pro Ala Ala
1 5 10 15
His Asn Arg Gly Leu Thr Gly Ser Gly Val Lys Val Ala Val Leu Asp
20 25 30
Thr Gly Ile Ser Thr His Pro Asp Leu Asn Ile Arg Gly Gly Ala Ser
35 40 45
Phe Val Pro Gly Glu Pro Ser Thr Gln Asp Gly Asn Gly His Gly Thr
50 55 60
His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile Gly Val Leu
65 70 75 80
Gly Val Ala Pro Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala
85 90 95
Ser Gly Ser Gly Ser Val Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala
100 105 110
Gly Asn Asn Gly Met His Val Ile Asn Met Ser Leu Gly Gly Ser Gly
115 120 125
Ser Ala Ala Leu Lys Ala Ala Val Asp Lys Ala Val Ala Ser Gly Val
130 135 140
Val Val Val Ala Ala Ala Gly Asn Glu Gly Thr Ser Gly Ser Ser Ser
145 150 155 160
Thr Val Gly Tyr Pro Gly Lys Tyr Pro Ser Val Ile Ala Val Gly Ala
165 170 175
Val Asp Ser Ser Asn Gln Arg Ala Ser Phe Ser Ser Val Gly Pro Glu
180 185 190
Leu Asp Val Met Ala Pro Gly Val Ser Ile Gln Ser Thr Leu Pro Gly
195 200 205
Asn Lys Tyr Gly Ala Tyr Asn Gly Thr Ser Met Ala Ser Pro His Val
210 215 220

Ala Gly Ala Ala Ala Leu Ile Leu Ser Lys His Pro Asn Trp Thr Asn
225 230 235 240

Thr Gln Val Arg Ser Ser Leu Glu Asn Thr Thr Thr Lys Leu Gly Asp
245 250 255

Ser Phe Tyr Tyr Gly Lys Gly Leu Ile Asn Val Gln Ala Ala Ala Gln
260 265 270

<210> 237

<211> 15

<212> PRT

<213> Bacillus lentis subtilisin

<400> 237

Ile Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro
1 5 10 15

<210> 238

<211> 18

<212> PRT

<213> Bacillus lentis subtilisin

<400> 238

Leu Glu Trp Ala Gly Asn Asn Gly Met His Val Ala Asn Leu Ser Leu
1 5 10 15
Gly Ser

<210> 239

<211> 15

<212> PRT

<213> Bacillus amyloliquefaciens subtilisin

<400> 239

Val Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro
1 5 10 15

<210> 240

<211> 17

<212> PRT

<213> Bacillus amyloliquefaciens subtilisin

<400> 240

Ile Glu Trp Ala Ile Ala Asn Asn Met Asp Val Ile Asn Met Ser Leu
1 5 10 15
Gly
